

# Repetition in Turing

For Loops  
(counted loops)

# Sample Code – Counted Loop

```
var count : int           %create a counter

count := 1                %set a starting value
loop
  put count
  count := count + 1      %increment the counter
  exit when count > 10    %set end value
end loop
```

# The For Loop

The counted loop is so common that a special type of loop was created to streamline the code.

```
for count : 1 .. 10  
  put count  
end for
```

Notes:

1. Do NOT declare the variable count. The for loop will take care of that automatically

# Counting Down with a For Loop

When we count upwards, the counter is incremented (i.e., we add 1 each time). It is also possible to count downwards by decrementing the counter. In Turing:

```
for decreasing count : 10 .. 1  
  put count  
end for
```

# Example – Blast Off!

```
put "Begin Count Down..."

for decreasing count : 10 .. 1
  put count
  delay(1000)
end for

put "Blast Off!"
```

# Changing the Increment/Decrement

So far, we have incremented or decremented by 1. It is possible to take larger steps using the “by” command to specify the (integer) step size.

```
for count : 1 .. 10 by 2  
  put count  
end for
```

```
for decreasing count : 10 .. 1 by 3  
  put count  
end for
```

# Exercises

See additional exercises and extensions on the course wiki:

<http://stevesweeney.pbwiki.com/Exercises+-+Intro+to+Counted+Loops>